AP Statistics Reading Notes
Pg. 145—153

1. The Correlation Coefficient (*r*) describes the _____ and _____ of a linear relationship between two _____ variables.

2. Before we can compute a correlation, we must first meet the three conditions below:

   a.

   b.

   c.

3. If I have a set of quantitative data, that has a linear relationship with no outliers and I compute an *r-value* of -.876, what can I conclude about the strength and direction of the relationship?

4. If I have a set of quantitative data, that has a linear relationship with no outliers and I compute an *r-value* of .043, what can I conclude about the strength and direction of the relationship?

5. True or False. If I have a set of quantitative data and compute an *r*-value of -.015, then there is no (or very little) relationship between the two variables.

6. What is wrong with this statement: "There is a strong positive correlation between weight and eye color."

7. Correlation values are always between _____ and _____.

8. Suppose that I find the correlation between variables to be 0.768. If I switch my response and explanatory variables, and compute my correlation, it will have a value of _____.

9. Suppose I calculated the correlation between height (inches) and weight (pounds) to be 0.675. Then suppose that I decided to change my measurement units to centimeters and kilograms and re-calculate the correlation. My new correlation would be _____.

10. Sketch the scatterplots that are described below:
    a. $r = -0.986$
    b. $r = 0.564$
    c. $r = 0.023$
    d. $r = 0.023$ (make the scatterplot show a relationship, even though the *r*-value is so low)

11. True or False. If the correlation between x and y is +1, then we can conclude that x causes y.

12. What is a lurking variable? What is the importance of a lurking variable?